



Tuesday 31 January 2023

Onsite: h.15 - Aula Ruffini, *Dipartimento di Scienze della Terra, Torino*

Remote: [via webex at this LINK](#)



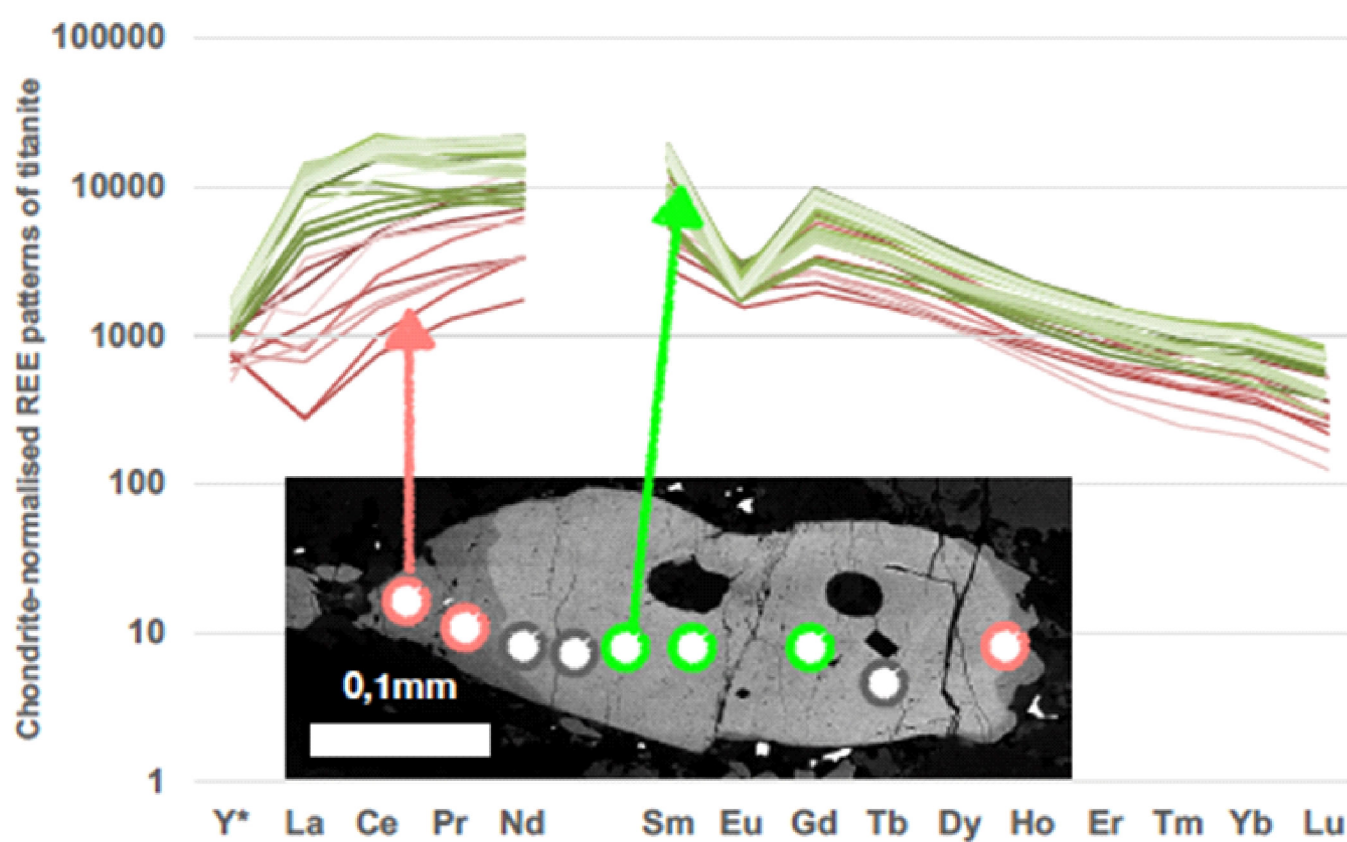
Exploring the geosphere and the biosphere by LA-ICP-MS

Antonio Langone

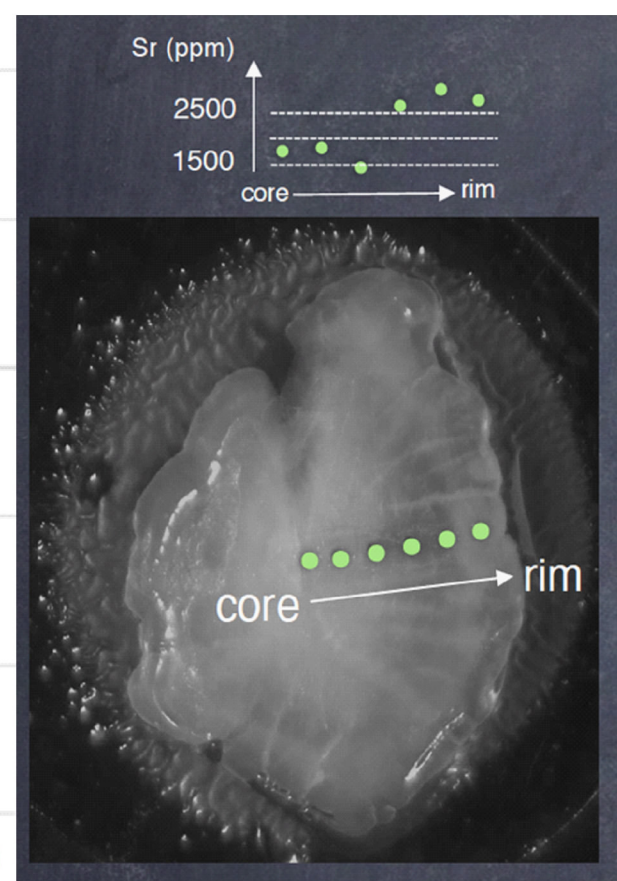
University of Pavia



The LA-ICP-MS technique is a powerful technique for exploring small volumes of solid material making the geosphere and/or the biosphere. It is particularly useful for decoding temporal/chemical sequences recorded by (zoned) rock-forming minerals and continuously growing biogenic carbonates (corals, bivalves, algae, otoliths, etc.). The last decades have seen a shift in emphasis from single spot determinations to the generation of 2-D compositional images that preserve the spatial context of the analyses. A further improvement for the LA-ICP-MS has consisted in the ability to collect synchronously isotopic ratios, for geochronological purposes, and trace element, for petrological reconstruction from the same material. The seminar will explore the theoretical principles at the base of the LA-ICP-MS, the advantages and disadvantages of using this technique, as well as a few examples of application of the LA-ICP-MS to both geosciences and biosciences will be illustrated.



Titanite zoning (SEM-BSE) and LA-ICP-MS Y-REE profile



Strontium variation (ppm) across a fish otolith zoning

The Speaker

Antonio Langone is Associate Professor of Geochemistry at the University of Pavia. He dedicated large part of his research activities on the geochemical, isotopic and petrological evolution of the continental crust. In the last years he focused its activity on the deformation-induced geochemical changes at both the mineral and rock scales. He is used to combine in situ geochemical data with microstructure and field observations.

